

A YEAR ON THE "SIBOGA."

Ein Jahr an Bord I.M.S. Siboga. Von Frau A. Weber van Bosse. Beschreibung der Holländischen Tiefsee-Expedition im Niederländisch-Indischen Archipel 1899-1900. Nach der II Auflage aus dem Holländischen übertragen von Frau E. Ruge-Baenziger. Pp. xiii+370. (Leipzig : W. Engelmann, 1905.) Price 6s. net.

In this book Mrs. Weber gives a popular account of the expedition the scientific results of which have been described in the "Siboga-Expeditie" edited by Dr. Max Weber.

The *Siboga*, a twin-screw vessel of the Royal Dutch Navy, built for the East Indian service, deprived of her armament, and specially fitted for her scientific voyage, left Surabaya, on the north coast of Java, on March 7, 1899, and returned thither on February 26, 1900, having spent the interval—practically a year—in exploring the marine, and especially the deep-water, fauna of the East Indies. The expedition consisted of Prof. Max Weber and Mrs. Weber, two scientific assistants, a doctor, and a draughtsman, and received from the naval staff of the vessel those ungrudging and invaluable services which the officers of our own Navy so invariably put at the disposal of the scientific members of an expedition. The investigation of the marine flora was in the hands of Mrs. Weber.

The course of the *Siboga* lay at first along the coasts of the Lesser Sunda group from Java to Timor, then across the Flores Sea to Saleyer Island, and to Macassar, in Celebes, where the expedition was landed for a time while the ship made a trip to Surabaya. On her return the voyage was continued through the Macassar Straits to the Sulu Islands, then southwards across the Celebes Sea to Kwandang, in Celebes, northwards again to the Sangir and Talaur groups, southwards through the Molucca Straits to Obi, and eastwards across the Halmahera Sea to the coast of New Guinea. From Atjatuning, in New Guinea, the ship sailed by Ceram, Amboyna, Buru, and Buton to Saleyer again. Here the expedition was left during a second trip of the *Siboga* to Surabaya. When a fresh start was made the course lay eastward across the Banda Sea by Amboyna to Aru and back to Amboyna. From this place the *Siboga* returned to Surabaya along the Sunda Islands by a different route from that which she had taken at starting.

The story of this voyage is pleasantly told by Mrs. Weber. Scattered through her account of the everyday life of the ship and the happenings at various stopping-places and dredging-grounds are allusions to the scientific discoveries of the expedition. Some of the soundings are particularly interesting. It appears that the Lombok Straits, instead of being a deep cleft between Bali and Lombok, are in reality quite shallow (170 fathoms). Since Weber has already shown that the fauna of the East Indies changes only gradually from an Asiatic to an Australian character in an easterly direction, we have now probably heard the last of that old friend of our

student days, "Wallace's Line"—a picturesque and fruitful hypothesis, for all the contempt with which it is apt to be treated nowadays. On the other hand, interesting soundings of considerable depth were obtained among the islands—some 2700 fathoms in the Banda Sea and in the Celebes Sea, 2200 fathoms in the Ceram Sea, 1500 fathoms between the Banda Sea and the Flores Sea, and 2000 fathoms close to land off Saleyer. Near the latter island great banks of calcareous algæ were found, which recalls Stanley Gardiner's observations on the importance of these organisms in Funafuti and elsewhere. The plankton also seems to have been unusually rich and plentiful. The sea bottom is in many places rough, entirely unlike the oozy bed of the great oceans, and was the cause of much loss and damage to gear.

The book is well got up and illustrated by some good photographs, and should prove interesting to the large class of readers who are attracted by books of travel.

YORKSHIRE FUNGI.

The Fungus Flora of Yorkshire. By G. Massee and C. Crossland. Yorkshire Naturalists' Union Botanical Transactions, vol. iv. Pp. 396. (London : A. Brown and Sons, Ltd., 1905.)

THE Yorkshire Naturalists' Union has held and maintained a high place in the history of British cryptogams, and its published Transactions abound in records of fungi in which the county seems to be peculiarly rich. It is hardly surprising, therefore, that a scientific society of such well-proved eminence should every now and then issue the results of its labours, originally published in its serial journal, in the form of a separate book.

To do this in the case of the fungi required more initiative and enterprise than with most other cryptogams, and the committee is to be congratulated, not only on having carried the work through, since 1902, but on having done it so thoroughly and efficiently.

When we extend our congratulations also to the two authors responsible for the work, we may take the opportunity of pointing out that while one is an amateur field naturalist of that peculiarly enthusiastic and accurate type for which Yorkshire has long been famous, the other is a professional mycologist of high reputation; and the combined labours of the two give us all the advantages of the accurate and industrious notes of a collector who knows his county thoroughly, together with the critical supervision of one who knows his herbarium equally well, and who has had shed on to his shoulders the cloak of Berkeley, and has been a fellow-worker with Cooke.

The book consists of 365 pages with appendices and an index, a too meagre bibliography, and more than 2600 entries. There is a short introduction and classification, with notes on the distribution within the county. The work is by no means a mere catalogue, though in many cases little more than the record of the name is given, together with the localities in which the fungus has been found growing. Interesting notes

as to the habit of the fungus abound, and while it is, of course, impossible in such a work to define species or even genera, there are excellent explanatory notes here and there for the use of the critical systematist.

The volume, which is neatly printed, is, in spite of rather too many misprints, indispensable to every professional mycologist, and will, of course, be the basis for all other fungus floras of Yorkshire and other counties.

The work affords a very good example of the excellent services to science which may be contributed by the collaboration of individual workers who are experts in different departments and will join their forces loyally for the benefit of the rest.

Of course, it is not claimed that all the fungi of the large area covered are recorded, and much remains for other workers, especially in the domain of the smaller and lower fungi; but, as has already been pointed out, we have a firm basis for the benefit of further workers, and shall hope to see the records gradually rendered more and more complete.

OUR BOOK SHELF.

The Principles and Practice of Iron and Steel Manufacture. By Walter Macfarlane. Pp. xi+266; 96 figures. (London: Longmans, Green and Co.) Price 3s. 6d. net.

This is a difficult book to review so as adequately to represent the nature of its contents to the "technical students, metallurgists, engineers," and others for whom it is intended. The somewhat florid style of the introduction, "Machinery ponderous and powerful or nimbly delicate and deft . . ." would lead one to expect a kind of poetic phantasy woven to give joy to the general reader, and the expectation is supported by the last sentence, about iron being the Master Metal because it has so many good qualities in well-balanced proportion. Really it is quite human, however, in that it has many wicked ways also, well known to the aforesaid engineers.

Later in the work there is a compound of the general and the technical, as is evidenced by the type of illustrations, numbering about a hundred, of which a considerable proportion are reproductions from photographs; thus, "Fig. 6, Charging a puddling furnace"; "Fig. 44, Siemens casting pit with ladle in the distance," evidently taken with a short-focus lens, for the ladle seems about half a mile away; "Fig. 54, Shovelling lime into a steel melting furnace"; while "Fig. 52, Empty steel ladle," may be introduced to finish with a little humorous touch. Taking at random the working of an acid open-hearth charge, the author says that after melting (p. 117) "Oxidation steadily proceeds. In the first two stages the oxidation is effected by the excess air which enters the furnace along with the producer gas. The oxidised products SiO_2 , MnO , and some FeO and Fe_2O_3 , go into the slag. In the third stage oxidation is largely due to the oxygen in the ore which is fed in." On p. 122 the author distinctly says, "During the third or boiling stage . . . when this stage is reached ore is cautiously fed into the furnace. . . ." How long it would take an ordinary charge to come on the boil without ore one could hardly guess, but to bring it on in a reasonable time requires very considerable additions of ore to get the slag into proper condition. This is a grave error for an author who has been fourteen years in iron and

steel works, and is also very misleading to a student of the subject. The matter has been dealt with in recent and ancient literature.

To sum up, the work may be of considerable interest to the general reader, but can hardly be recommended as a guide to the technical man engaged in such work as the manufacture of steel.

On Models of Cubic Surfaces. By W. H. Blythe. Pp. xii+106. (Cambridge: University Press, 1905.) Price 4s. net.

MR. BLYTHE has attempted a difficult task, to give an account of methods of constructing models of a cubic surface without either assuming all the theory of the surface as known or recapitulating it; the result, so far as the introductory portions of the book are concerned, is an unsatisfying mixture of rudiments and quotations and references to difficult theorems. As regards the latter portion Mr. Blythe may best speak for himself. "About ten years ago my attention was drawn to arranging the twenty-seven straight lines. . . . After constructing several models, I did not continue the series, for I subsequently found that a complete set had been made in Germany. . . . Copies of these models can be purchased. Still the models described in this book are sufficient to give an idea of the shape of a cubic surface."

We think Mr. Blythe is too modest, and that this little book of a hundred pages will be of interest to those who are studying the surface and desire actually to make models; but it must be confessed that in our opinion the writer would have been better advised either to make the theoretical portions more systematic or to have omitted them, and given a fuller account of the models with many more figures. Perhaps it is fair to say that Mr. Blythe's book is a good example of what may in cases be the bad effects of a too rigid and uniform examination system; it happens that cubic surfaces are outside what is regarded as the normal course of geometry for a student for the mathematical tripos; under a free and stimulating system, when Mr. Blythe first began to take an interest in models of cubic surfaces he would have been encouraged by his environment to go on and make a complete set, and other students would have helped him, and there would have been formed a fresh rootlet for the mathematical school to grow from; as it is, the environment requires either that he should invent a completely novel theory of the surfaces or models, or pay the penalty of being regarded as off the track, except by those few who value mathematics as they find it interests them.

A Synonymic Catalogue of Homoptera. Part i. Cicadidae. By W. L. Distant. Pp. 207. (London: Printed by Order of the Trustees of the British Museum, 1906.)

MR. W. L. DISTANT has for many years made a study of the Rhynchota, and has paid particular attention to the Cicadidae. The catalogue of this family, together with a synopsis of the subfamilies and genera now published, was, we learn from Prof. E. Ray Lankester's preface, generously placed at the disposal of the Trustees of the British Museum by Mr. Distant. This work should be of great assistance to students of this group of insects.

Iona. By Elizabeth A. McHardy (Mrs. Raymond Smith). Pp. 48. (Glasgow: R. Gibson and Sons, Ltd., n.d.) Price 1s. net.

This attractive booklet provides brightly written and well illustrated accounts of Iona—"the Blessed Isle"—and of Staffa with its wonderful Fingal's Cave, together with an appreciation of St. Columba. It should not be long before the little publication secures a wide popularity among visitors to the west of Scotland.